



WASHINGTON'S AGRICULTURAL VEGETABLE CHEMICAL USAGE, 2006

NATIONAL AGRICULTURAL STATISTICS SERVICE

United States Department of Agriculture

Washington Field Office • Olympia, WA 98507

www.nass.usda.gov/



September 2007

Contact: Chris Messer (360)902-1940
nass-wa@nass.usda.gov

ASPARAGUS

Results of the 2004 and 2006 Vegetable Chemical Use Surveys are presented in the following tables. The 2006 survey was designed to collect data on chemical applications made after the end of the 2005 harvest through completion of the 2006 harvest from a sampling of vegetable crops in Washington. Targeted crops for Washington included asparagus, processing carrots, processing sweet corn, dry onions, processing green peas, and strawberries. The probability nature of the survey allowed for estimates that are representative of chemical use on all targeted vegetables in the state.

Survey results include estimates of total area treated, number of applications, rates per application, rates per crop year, and total pounds of chemicals applied. Data were summarized for the active ingredients of pesticides and other chemicals applied. Pesticide data were collected for specific formulations of active ingredients (trade name products) and then converted to active ingredient. Therefore, the estimates associated with a particular active ingredient may represent applications of several trade name products. Pesticide application rates also reflect partial coverage applications as a result of band, spot, and alternate row spraying techniques. Fertilizer information, which was not collected during the

2004 Vegetable Chemical Use Survey, was collected in the 2006 Vegetable Chemical Use Survey.

Three states were surveyed for **asparagus** in 2006: California, Michigan, and Washington. Surveyed acreage totaled 46,200 acres and Washington accounted for nearly 20 percent of total surveyed acreage. All estimates are for asparagus of bearing age only.

Within the three surveyed states, asparagus growers applied nitrogen to 79 percent of their acreage, with the greatest coverage in Michigan at 96 percent. They applied phosphate, potash, and sulfur to 43, 57, and 28 percent of their acreage, respectively. Herbicides, insecticides, and fungicides were applied to 78, 68, and 34 percent, respectively, of the Program States acres. The most common herbicide used in Program States was Diuron applied to 62 percent of the crop. Glyphosate isopropylamine salt and Metribuzin, were the next most common herbicides with 38 and 37 percent of the acreage applied respectively. Carbaryl was the most widely used insecticide at 38 percent followed by Disulfoton at 32 percent. Chlorothalonil was the most commonly used fungicide, applied to 20 percent of the acreage.

Asparagus: Fertilizer Applications, Planted Acreage & Percentage Receiving Applications, Program States & Total, 2004 & 2006

State	Planted Acreage		Area Receiving 1/							
			Nitrogen		Phosphate		Potash		Sulfur	
	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
	Acres		Percent							
California	26,000	25,000	-	72	-	51	-	50	-	24
Michigan	15,500	12,200	-	96	-	35	-	91	-	21
Washington	15,000	9,000	-	78	-	33	-	29	-	47
TOTAL	56,500	46,200	-	79	-	43	-	57	-	28

1/ Refers to acres receiving one or more applications of a specific fertilizer ingredient.

- Fertilizer applications were not collected in the 2004 Vegetable Chemical Use Survey.

Asparagus: Pesticide Applications, Planted Acreage & Percentage Receiving Applications, Program States & Total, 2004 & 2006

State	Planted Acreage		Area Receiving 1/							
			Herbicide		Insecticide		Fungicide		Other	
	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
	Acres		Percent							
California	26,000	25,000	45	72	46	66	5	12	**	**
Michigan	15,500	12,200	97	97	95	91	78	89	**	**
Washington	15,000	9,000	82	71	82	42	52	22	**	**
TOTAL	56,500	46,200	69	78	69	68	37	34	**	**

1/ Refers to acres receiving one or more applications of a specific pesticide class. ** Insufficient reports to publish data for pesticide class.

Asparagus: Agricultural Chemical Applications, Washington, 2004 & 2006 1/

Active Ingredient 2/	Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
	Percent		Number		Pounds Per Acre				1,000 Pounds	
Herbicides										
Diuron	48	43	1.2	1.4	1.17	1.348	1.40	1.839	10.0	7.1
Glyphosate iso. salt	11	12	1.1	1.3	0.69	0.684	0.76	0.915	1.2	1.0
Linuron	16	-	1.5	-	0.68	-	1.02	-	2.5	-
Metribuzin	-	36	-	1.8	-	0.797	-	1.438	-	4.7
Trifluralin	52	-	1.0	-	1.03	-	1.05	-	8.3	-
Insecticides										
Disulfoton	58	-	1.3	-	1.05	-	1.38	-	11.9	-
Fungicides										
Mancozeb	41	22	1.2	1.1	1.39	1.527	1.70	1.612	10.4	3.2

1/ Planted acres in 2004 for Washington were 15,000, and planted acres in 2006 were 9,000. 2/ Insufficient reports to publish data for the following agricultural chemicals 2004: Herbicides: 2,4-D, Fluzifop-P-butyl, Halosulfuron, Metribuzin, Norflurazon, Paraquat, Sethoxydim. Insecticides: Carbaryl, Chlorpyrifos, Diazinon, Dimethoate, Malathion, Oxamyl, Permethrin, Pyrethrins, Rotenone. Fungicides: Azoxystrobin, Chlorothalonil, Copper hydroxide, Sulfur. Other Chemicals: Dichloropropene, Metam-sodium. 2006: Herbicides: 2,4-D, dimeth. salt, Bromoxynil, Clopyralid, Dicamba, sodium salt, Fluzifop-P-butyl, Glyphosate amm. salt, Halosulfuron, Linuron, Paraquat, Pendimethalin, Propachlor, Trifluralin. Insecticides: Carbaryl, Chlorpyrifos, Dimethoate, Disulfoton, Imidacloprid, Malathion. 3/ Refers to acres receiving one or more applications of a specific agricultural chemical. Note: Data may not multiply across due to rounding.

Asparagus: Agricultural Chemical Applications, Program States, 2004 & 2006 1/

Active Ingredient 2/	Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
	Percent		Number		Pounds Per Acre				1,000 Pounds	
Herbicides										
2,4-D, dimeth. salt	6	5	1.1	1.3	1.05	1.418	1.16	1.782	3.7	3.9
Dicamba	2	-	1.2	-	0.35	-	0.43	-	0.5	-
Diuron	51	62	1.5	1.3	1.30	1.523	1.91	2.034	54.8	57.6
Fluzifop-P-butyl	2	2	1.0	1.0	0.10	0.285	0.10	0.285	0.1	0.2
Glyphosate amm. salt	-	3	-	1.3	-	0.145	-	0.185	-	0.3
Glyphosate iso. salt	38	38	1.5	1.5	0.85	1.095	1.25	1.608	26.6	27.3
Halosulfuron	-	3	-	1.3	-	0.050	-	0.065	-	0.1
Linuron	15	15	1.5	1.4	0.78	0.752	1.14	1.078	9.8	7.6
Metribuzin	34	37	1.5	1.3	0.63	0.691	0.94	0.902	17.7	14.9
Norflurazon	1	-	1.4	-	0.76	-	1.07	-	0.3	-
Paraquat	10	6	1.2	1.3	0.58	0.646	0.68	0.848	3.9	2.3
S-Metolachlor	2	9	1.2	1.1	1.19	1.133	1.42	1.192	1.7	5.2
Sulfentrazone	-	9	-	1.1	-	0.194	-	0.217	-	0.9
Terbacil	1	1	1.3	1.0	0.27	0.359	0.35	0.359	0.2	0.1
Trifluralin	19	25	1.0	1.2	1.21	1.358	1.23	1.605	13.2	18.8
Insecticides										
Carbaryl	38	38	2.4	2.3	0.83	0.780	2.02	1.813	43.3	32.3
Chlorpyrifos	21	24	1.1	1.2	0.94	0.918	1.00	1.109	11.9	12.3
Disulfoton	31	32	1.3	1.1	1.02	1.001	1.32	1.114	23.5	16.5
Malathion	3	2	1.0	1.2	0.97	0.892	0.97	1.067	1.5	0.8
Permethrin	15	16	2.2	2.8	0.09	0.105	0.19	0.291	1.6	2.1
Fungicides										
Chlorothalonil	17	20	2.5	2.7	1.28	1.490	3.14	3.974	29.7	37.5
Mancozeb	21	14	1.7	1.8	1.43	1.395	2.48	2.495	29.4	16.9
Sulfur	2	3	2.3	1.4	1.86	20.480	4.24	29.064	5.8	42.4
Tebuconazole	-	4	-	1.3	-	0.110	-	0.143	-	0.3

1/ Planted acres in 2004 were 56,500 acres and 2006 planted acres were 46,200, respectively. States included in 2004 and 2006 were CA, MI, & WA. 2/ Insufficient reports to publish data for the following agricultural chemicals: 2004: Herbicides: 2,4-D, Dimeth. salt, 2,4-D Triisopropan., Acetic acid (2,4-D), Alachlor, Dicamba, Dimet. salt, Glyphosate diam. salt, Halosulfuron, Sethoxydim, Sulfentrazone. Insecticides: Abamectin, Azadirachtin, Azinphos-methyl, Diazinon, Dimethoate, Esfenvalerate, Methomyl, Oxamyl, Pyrethrins, Rotenone. Fungicides: Azoxystrobin, Copper hydroxide, Mefenoxam, Myclobutanil, Tebuconazole. Other Chemicals: Cytokinins, Dichloropropene, Metam-sodium. 2006: Herbicides: 2,4-D, dieth. salt, Bromoxynil, Clethodim, Clopyralid, Dicamba, digly. salt, Dicamba, sodium salt, Metolachlor, Norflurazon, Pendimethalin, Propachlor, Sethoxydim. Insecticides: Abamectin, Azadirachtin, Bt subsp. kurstaki, Carbofuran, Cyfluthrin, Diazinon, Dicofof, Dimethoate, Emamectin benzoate, Esfenvalerate, Imidacloprid, Methomyl, Phosmet, Pyrethrins, Spinosad, Thiacloprid, Thiamethoxam. Fungicides: Maneb, Myclobutanil. Other Chemicals: Dichloropropene, Metam-sodium.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical. Note: Data may not multiply across due to rounding.

